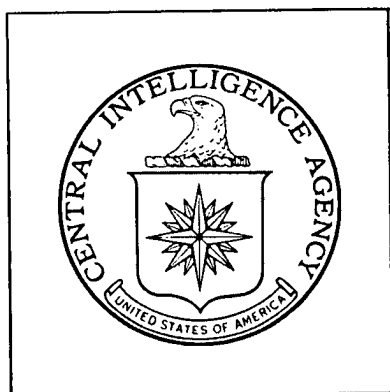


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**DIRECTORATE OF
INTELLIGENCE**

**Industrial Facilities
(Non-Military)**

Basic Imagery Interpretation Report

Kai-feng Chemical Fertilizer Plant

Kai-feng, China



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DATE OCTOBER 1968

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RCS - 13/0052/69

INSTALLATION OR ACTIVITY NAME			COUNTRY	
Kai-feng Chemical Fertilizer Plant			CH	
UTM COORDINATES	GEOGRAPHIC COORDINATES		COMIREX NO.	WAC-PIC NO 25X1
50SKP 600518	34-46-55N 114-23-45E		None	0385-13C
MAP REFERENCE				
15th RTS. USATC 200, Sheet 0385-9HL, 2nd ed., November 63, Scale 1:200,000 (SECRET)				
LATEST IMAGERY USED		NEGATION DATE (If required)		
		Not Required 25X1		

ABSTRACT

Construction of the Kai-feng Chemical Fertilizer Plant was started prior to March 1962, and the first production of ammonium sulfate was probably accomplished in the first half of 1964. A second phase of construction, which included the nitric acid and ammonium nitrate production facilities, was initiated early in 1965, and these facilities were in operation sometime around October 1966. No significant changes in the plant's facilities have been made since October 1966.

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INTRODUCTION

The Kai-feng Chemical Fertilizer Plant is located in Honan Province, approximately 1.7 nautical miles (nm) east of the Kai-feng city complex. The plant is part of an industrial build-up in a generally agricultural area south of the Huang Ho (Yellow River).

Several small fabrication-type plants lie in the immediate vicinity of this plant, but none of them have been identified as to product or function. The Kai-feng Thermal Power Plant [] which furnishes electrical power for the fertilizer plant, is located approximately 2.6 nm to the west-southwest within the city. Other installations in the area, but not associated with the plant, include the Kai-feng Army Barracks and Airborne School [] located 1.8 nm south-southwest, and the Kai-feng Airfield [] located 2.8 nm southwest.

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BASIC DESCRIPTION

Physical Features

The fertilizer plant occupies an irregularly shaped, walled area which measures approximately 1,800 by 3,700 feet and contains 130 acres. The plant is served by a good all-weather road system and by a rail spur from the main line between Cheng-hsien and Suchow.

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In general, the plant layout and process facilities are quite similar to those observed in other Chinese chemical fertilizer plants. The water gas production and ammonia synthesis facilities are distinctly characteristic of the Russian design as found in the fertilizer plants at Tai-yuan and Chi-lin. The nitric acid and nitrate facilities in this plant illustrate an observed tendency of the Chinese toward compactness and away from the expansive Russian design. This trend toward compactness has been noted in Chinese plants constructed in the middle and late 1960's and lends somewhat of an American or Japanese aspect to these facilities.

Operational Functions

The major products of this plant are ammonia-based fertilizers. Using coal and pyrite as raw materials, both ammonium nitrate and sulfate are produced. Aqueous ammonia fertilizer could also be made, but handling facilities for this type of product could not be identified.

Secondary products of the plant include sulfuric acid and possibly ammonia and nitric acid. However, all or most of the ammonia and nitric acid are probably used in fertilizer production.

The specific production areas and major facilities are depicted and annotated on Figure 3.

Construction Chronology

All available photographic coverage of the plant during the period from March 1962 to March 1968 was used in this study. The line drawing presented in this report shows the expansion of facilities since August 1965, the date of the latest photography used in the referenced report. 1/

March 1962 - The basic facilities for the production of ammonia, sulfuric acid, and ammonium sulfate appeared to be in the mid-stages of construction. The main production buildings were nearly complete, but several specialized items of equipment and pipelines connecting the various facilities were in the early construction phases.

September 1963 - Construction was still in progress on the sulfuric acid facilities and the pipelines throughout the plant. Work had been started on additional gas purification units and the steam plant had been modified. The most active area of construction was at the coal unloading and handling facilities.

August 1964 - Facilities for the ammonia, sulfuric acid, and ammonium sulfate production appeared complete and in operation. No significant construction activity was noted.

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August 1965 - Construction had been started in the ammonium nitrate production area. No other significant changes were noted in the plant area.

October 1966 - The nitric acid and ammonium nitrate facilities were completed and appeared to be operational. The sulfuric acid facilities had been expanded by 20-25 percent. Also, a probable fertilizer blending section had been added in the sulfate production area. Other miscellaneous buildings had been built throughout the plant area.

September 1967 - The only significant change in facilities was an addition built on the ammonia compressor building.

March 1968 - Construction had begun on an unidentified new section of the plant.

Production Activity

The ammonia, sulfuric acid, and ammonium sulfate production areas were probably placed in operation early in 1964 and appeared to be in production on all photo coverage subsequent to August 1964.

The nitric acid and ammonium nitrate facilities were probably placed in production sometime around October 1966.

Fluctuations in the amounts of raw materials and rail traffic in the plant area have been noted. These variations are probably due to the seasonal demand for fertilizers.

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REFERENCES

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Maps

15th RTS. US Air Target Chart 200, Sheet 0385-9HL, 2nd edition, Nov 63,
Scale 1:200,000 (SECRET)

Documents

1. CIA. PIR 65107/66, Kai-feng Nitrogen Fertilizer Plant, Kai-feng, China,
April 1966 (TOP SECRET RUFF)

Requirement

EXSUBCOM - BR-N/002-69

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